Alexandra Cousteau's EXPEDITION BLUE PLANET

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U.S. Department of State
Bureau of International Information Programs
http://www.america.gov/blue_planet.html

Alexandra Cousteau is on an expedition in North America, learning how freshwater resources are used and protected. Here, she and her crew interview Randy Carver, a farmer involved in irrigation regulation in Colorado. The granddaughter of the oceanographer Jacques Cousteau, Alexandra is using social media to distribute videos, photographs and interviews about what she learns to promote smarter water use. See the stops and meet the people on the route of Expedition Blue Planet.

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"The mission of Expedition Blue Planet is really about telling stories that engage people and inspire them to be part of taking care of the water that they have in their own communities. And we do that by telling stories."

—ALEXANDRA COUSTEAU

LISTEN TO ALEXANDRA
TALK ABOUT THE EXPEDITION'S MISSION
HTTP://GO.USA.GOV/CGG

Throughout the course of the long journey across North America, Alexandra Cousteau and the Expedition Blue Planet crew are meeting with school and community groups to raise awareness about the importance of protecting, sharing and maintaining freshwater uses. Here, she talks to children at the very beginning of the journey in Eugene, Oregon.

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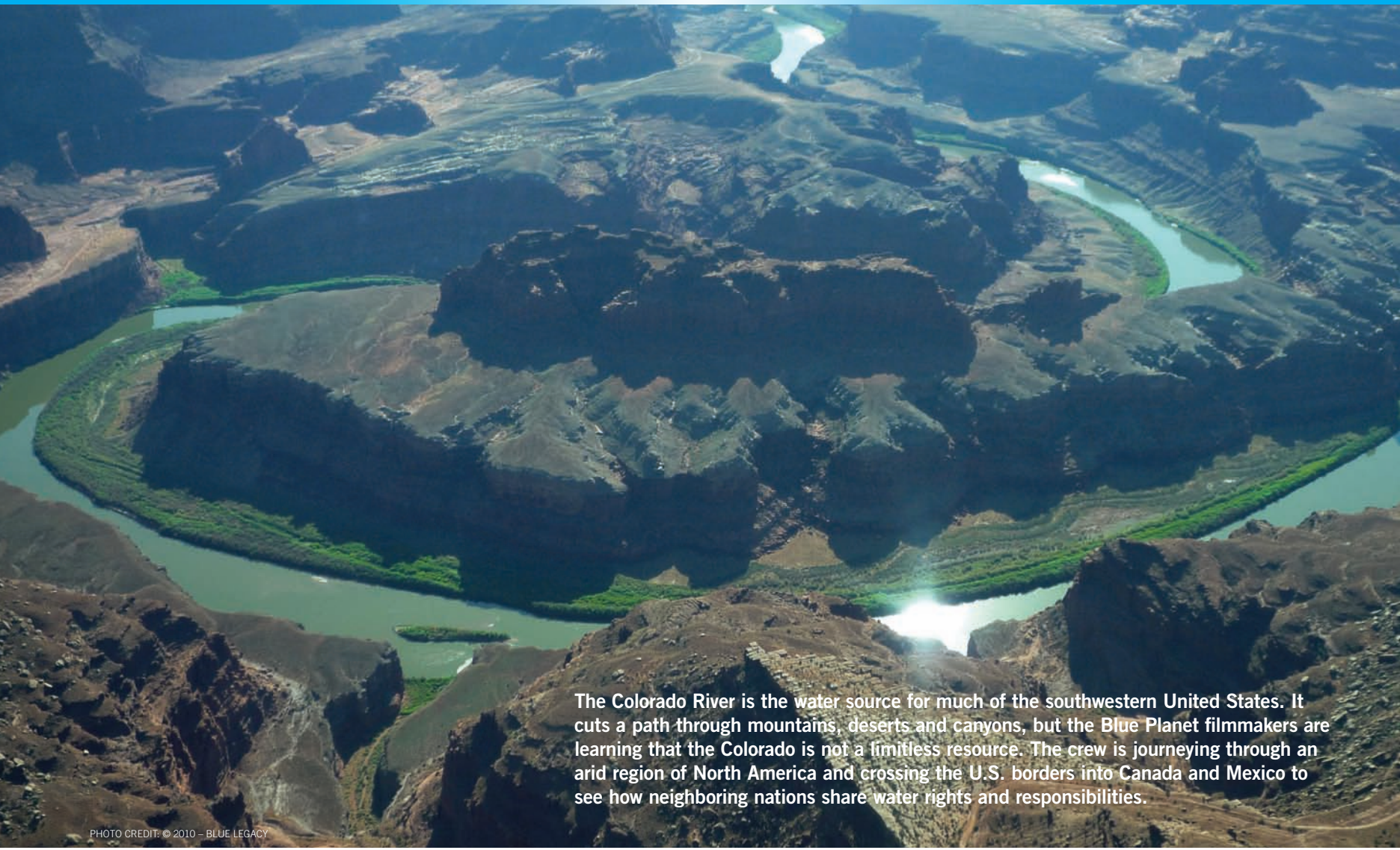
"The solution really is with people taking responsibility and taking action in their own communities, in their own homes and their own neighborhoods. And that's how we'll save the waterways in North America – is by people getting involved."

—ALEXANDRA COUSTEAU

LISTEN TO ALEXANDRA
TALK TO CHILDREN IN LIBRARY
HTTP://GO.USA.GOV/CG2



The Colorado River is the water source for much of the southwestern United States. It cuts a path through mountains, deserts and canyons, but the Blue Planet filmmakers are learning that the Colorado is not a limitless resource. The crew is journeying through an arid region of North America and crossing the U.S. borders into Canada and Mexico to see how neighboring nations share water rights and responsibilities.

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"The Colorado River is being used for everything. It's one of the most managed and allocated rivers in the world. Everybody in the Southwest gets his water from the Colorado River in one way or another. Whether it is the water that comes out of their taps, the water that irrigates the food that they eat, whether it's the water that grew the cows that provide beef, the water that goes onto golf courses …. Without the Colorado River, there would be no life in the American Southwest as we know it today. It really is — the history of the Southwest is intimately tied to the Colorado River. It's carved the geography and the lives of the people there for generations and generations."

—ALEXANDRA COUSTEAU

LISTEN TO ALEXANDRA
TALK ABOUT USES OF THE COLORADO RIVER WATER
HTTP://GO.USA.GOV/CGT

PHOTO CREDIT: USGS

The Colorado River watershed is formed by tributaries that feed the river from its origins in the Rocky Mountains to its end point in Mexico. Huge dams have created the reservoirs of Lake Mead and Lake Powell, and their waters allowed rapid expansion of the major cities of Los Angeles, Las Vegas and Phoenix. But if current use is not curtailed, Lake Mead, the nation's largest reservoir, could dry up as early as 2021, according to scientific predictions.

"It's really important from our perspective that people understand water management. What happens to the water to get it to your tap? How does it get there? In the Colorado River, the minute raindrops fall in the Rocky Mountains, they are captured, and they are piped and diverted into these enormous tunnels under the Continental Divide and all across the area to make sure that there's water for towns and industry and farms."

—ALEXANDRA COUSTEAU

LISTEN TO ALEXANDRA
TALK ABOUT UNDERSTANDING WATER MANAGEMENT
HTTP://GO.USA.GOV/CGB

Hoover Dam blocks the Colorado River to form the Lake Mead reservoir, which holds enough water to submerge the state of New York under 1 foot (30 centimeters) of water.

PHOTO CREDIT: © 2010 – BLUE LEGACY

"We don't necessarily need to dam rivers to benefit from them for energy production. There are other technologies out there that are available that would have very small impact on the local environment and the communities that live in that environment. I think it's time in the United States for us to start investing in those solutions and really innovating. This is a country that is really good at innovating when it invests in research and development; it invests in people, it invests in innovation. Now is the time to do that."

—ALEXANDRA COUSTEAU

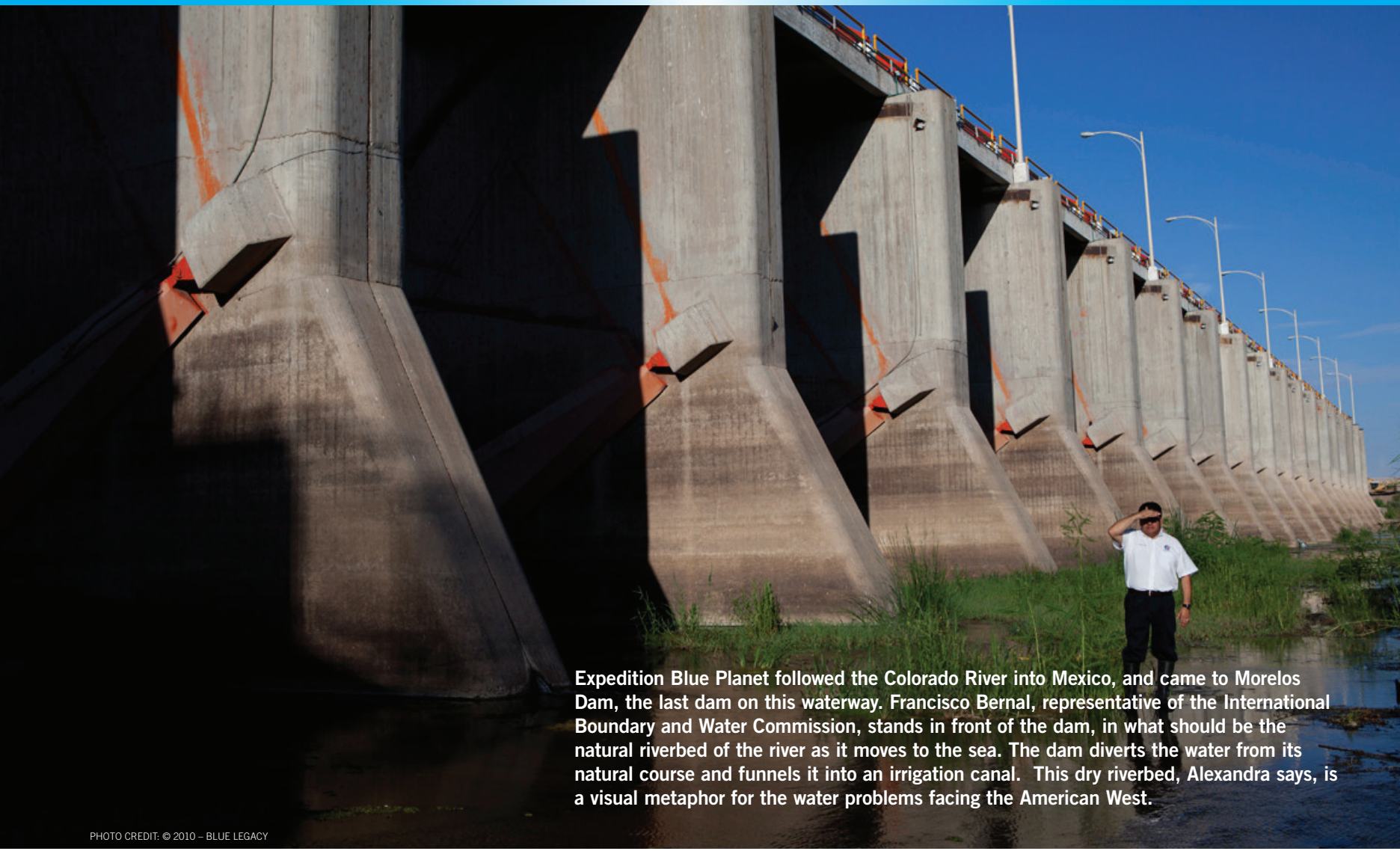
LISTEN TO ALEXANDRA
TALK ABOUT ENERGY INNOVATION
HTTP://GO.USA.GOV/CGZ

This photo of the Lake Mead shoreline, reveals how water levels have fallen. Cliffs bleached white by higher waters of an earlier time show how much the lake level has dropped due to water demands of an increasing population. This "bathtub ring" is about the height of a 10-story building. The many users drawing on the Colorado reservoirs have depleted its flow so much that the river dries out before its terminus at the Gulf of California.

PHOTO CREDIT: © 2010 – BLUE LEGACY

"We need rivers to wash salt off the land so you have productive farmland, and so that there's room for nature, and places for people to recreate, and water for people to have access to. And when we cut them off and they no longer flow downstream, lands get salted because the water is not washing the salt off the land. And most importantly, the place where rivers actually meet the sea, where that fresh water and that salt water mix — those places are called estuaries, and they are some of the most productive places in the oceans around the world. And so when we stop rivers from meeting the sea, we're actually robbing the ocean of their nurseries — places where fish and shrimp and all sorts of creatures can go and reproduce and have their babies. And so that's actually what's happened in the Colorado River." —ALEXANDRA COUSTEAU

LISTEN TO ALEXANDRA
TALK ABOUT ENVIRONMENTAL CONSEQUENCES
HTTP://GO.USA.GOV/CGJ



Expedition Blue Planet followed the Colorado River into Mexico, and came to Morelos Dam, the last dam on this waterway. Francisco Bernal, representative of the International Boundary and Water Commission, stands in front of the dam, in what should be the natural riverbed of the river as it moves to the sea. The dam diverts the water from its natural course and funnels it into an irrigation canal. This dry riverbed, Alexandra says, is a visual metaphor for the water problems facing the American West.

PHOTO CREDIT: © 2010 – BLUE LEGACY

"Even in a country like the United States, on a river like the Colorado that has had so many brilliant people thinking about how to harness it, to provide water to thirsty people and thirsty land, we are still reaching a critical point on the Colorado where — with climate change, and population growth, and overallocation and competing demands — we're going to have to make some tough decisions coming up. I think in the United States, as in every other country around the world, water will be the limit to our growth. We just simply cannot continue to grow without more water. And there's a limited supply of fresh water on the planet; there's not going to be any more of it."

—ALEXANDRA COUSTEAU

LISTEN TO ALEXANDRA
TALK ABOUT CHOICES AHEAD FOR POLICYMAKERS
HTTP://GO.USA.GOV/CGD

Remembering the Colorado River

by Anne Casselman

Expedition Blue Planet traced the Colorado River from its headwaters in the Rocky Mountains to the southernmost point in the waterway's historical outlet to the Sea of Cortez, also known as the Gulf of California. In southwest Arizona, the crew led by Alexandra Cousteau met with Native American tribal people who remember how the river once shaped their lives and culture. But people upstream have now taken the water away, and one elder described the loss.

Baja, Mexico — A 73-year-old elder of the Cucapa tribe, Innocencia Gonzales speaks of the cultural cost of the Colorado River's death, and her stories are as melancholy as they are beautiful.

At the base of the Cucapa mountains that rise up from the Baja California desert, Innocencia perched on a rock and told Alexandra about the water that previously flowed through her land but no longer does, due to overallocation of water upstream, followed by diversion of what remains of the Colorado River at Morelos dam in Mexico.

"Sixty years ago we used to fish Totoaba [a fish native to the sea of Cortez] in the Colorado River here. There was a caldera up in the mountains that our people fished in. The mountains were green and now they are bare rock. We used to collect the blossoms of the barrel cactus and they tasted so good, just like asparagus," she told us. Her eyes, which had been focused on the burrowing owl feather that she worried between her fingers, shone at the recollection.

Today we arrived at the foothills of the Cucapa Mountains to find the unofficial dump for the neighboring town of El Mayor. Our car tires shattered shards of blue, green, aqua glass into even smaller pieces. Refuse littered the ground, embedded in caked dirt.

PHOTO CREDIT © 2010 – BLUE LEGACY

By the time the interview had wrapped up, the morning sun had risen further and we retreated to the shade of a tiny mesquite tree. Everything around us looked dry, brown and drained of life. No wonder. This region gets a mere two inches [five centimeters] of rainfall each year.

And so when Innocencia told us of how she used to swim the Colorado's sweeping waters, and how her tribe lived on its resources, we all felt — as vividly as the sweat and sunscreen that smarted on our cheeks — what wealth the Colorado River once bestowed on this land.

Anne Casselman is a crew member of Expedition Blue Planet.

From Delta To Mudflat

by Osvel Hinojosa-Huerta and
Yamilett Carillo Guerrero

Two local water heroes met up with the Blue Planet Crew to explain their work to restore the Colorado's natural delta where it enters the Sea of Cortez, also known as the Gulf of California.


PHOTO CREDIT: © 2010 – BLUE LEGACY

These two local heroes met up with the Blue Planet Crew to explain their work to restore the Colorado's natural delta where it enters the Sea of Cortez, also known as the Gulf of California.

The story of the Colorado River delta is one of death and re-birth, despair and hope. Once considered one of the world's great desert estuaries, the delta of this fully diverted, over-allocated, drought-prone Colorado River has no water rights of its own. As a result, the Colorado River no longer reaches the sea. Its terminus in the Sea of Cortez is now a vast hypersaline mudflat, which thirsts for freshwater and extends as far as the eye can see.

Our five days on expedition were long and the weather was blazing hot (117 degrees Fahrenheit and 47 degrees Celsius) but the team's enthusiasm and commitment infected us. By the end we had explored the most degraded landscapes and the most beautiful wetlands in the delta - a stark contrast of what the absence or presence of freshwater does to ecosystems.

For this endeavor, we counted on the help of our friends: river advocates, water managers, farmers, fishermen, Cucapá elders and delta residents. Their voices told the story of how dams and diversions in the basin have impacted nature and livelihoods in this region. But they also spoke of the restoration miracles caused by inadvertent flows and the hope that river water will flow in the delta again.

Before the development of the hydraulic infrastructure in the basin, the Colorado River delta supported over 500,000 hectares of riparian and wetland areas, forming an extensive estuary as the river reached the Upper Gulf of California. After the completion of the larger dams in the basin in the 1960s, no water reached the area for nearly 20 years, causing the disappearance of riparian forests, marshes, and the degradation of the estuary. The lack of river flows also caused a decline on the marine life in the Upper Gulf.

However, a modest but significant portion of wetlands has been regenerated in response to inadvertent water releases from U.S. dams, seepage from unlined canals and agricultural return [irrigation water from fields flowing back to the wetlands] flows. This way, the delta remains one of the most important sites for migratory water birds, as well as a wetland of international importance.

In arid-land rivers like the Colorado, allocating instream flows to maintain viable ecosystems requires a basin-wide commitment to reduce water diversions and aquifer extractions. Difficult as it is to change the way we use and value water, the question is not whether environmental flows can be afforded, but whether can we afford not to provide flows for nature.

The interest in restoring the Colorado River delta has been increasing on both sides of the [U.S. and Mexican] border. Opportunities for restoration have been identified, and these ideas have been discussed in binational forums incorporating environmental considerations into the political, social, and economic frameworks. This process has resulted in a consensus on the importance of implementing a restoration program, which would consider water requirements for the conservation of nature.

The visit from Blue Legacy could not have been timed better, as this is a crucial moment in the life and future of the Colorado River delta; allocation of water for nature is finally within reach. The awareness being created by this expedition will certainly help us move forward towards restoring flows in the river.

Osvel Hinojosa-Huerta is the director of the water and wetlands program at the environmental group Pronatura Noroeste. Yamilett Carillo Guerrero is the coordinator of the Initiative for Sustainable Watersheds.

Students Act Locally to Save the Colorado River

by Jasmyn and Diamond Frankin

A helicopter ride over Lake Mead, the Hoover Dam, the Water Treatment Facility and Las Vegas gives two young local water heroes a new view on the importance of their work to raise awareness of water conservation issues in their community. Bio Text at the end in Italics: Sisters Jasmyn and Diamond Frankin are members of their high school's Youth Advisory Council in LasVegas, one of the cities that draw their water from the Lake Mead reservoir on the Colorado River. The group works with the local water authority to raise awareness of water conservation issues in their community.

PHOTO CREDIT: © 2010 – BLUE LEGACY

The opportunity to see all of this from a helicopter was exciting but even more thrilling was that Pat Mulroy, General Manager of the South Nevada Water Authority, and Alexandra Cousteau would accompany us! From the air, we witnessed from a bird's eye view the water issues down below.

As we flew over the homes of valley residents, we noticed several troubling issues regarding water: from uncovered pools to sprinklers sending water into the streets. Diamond and I were convinced that we had to do more to inform residents on the water they could be saving.

Pat talked about the use of hydroelectricity in the valley as we flew over the Hoover Dam. She said that once the lake drops below a certain level, the electric power we rely on will no longer be available. This revelation was both shocking and frightening.

Then, as we reached Lake Mead, Alexandra asked us how it felt to grow up and watch the lake's water levels constantly drop. Instantly, we started thinking of our family vacations spent down at the lake. Mom and Dad always pointed out the "bathtub ring" on the land and told us to look at how much water the Valley had used. This made us realize that we have always known about water issues here but did not fully grasp the gravity of them.

As we grew older, we became more aware of why the water was disappearing from Lake Mead and the issues that this presented to our community. Our population has been growing, and with more people to support, we use more water.

It is up to us, as a community, to use water wisely so we can all continue to live and grow here. In the Youth Advisory Council, Diamond and I are among 31 students from 19 different high schools creating water-smart awareness projects.

In 2009, we hosted World Water Day where about 500 people enjoyed entertainment and informational booths about how to be sustainable. This year, to reach out to a great number of people, we held a Youth Environmental Summit that featured guest speakers and workshops about managing our resources. One hundred fifty students came as delegates and left as informed conservationists.

With our project complete and many of our members going off to college, the knowledge and spirit of our water-smart activism will be carried with us wherever we go.

Sisters Jasmyn and Diamond Frankin are members of their high school's Youth Advisory Council in Las Vegas, one of the cities that draw their water from the Lake Mead reservoir on the Colorado River. The group works with the local water authority to raise awareness of water conservation issues in their community. A helicopter ride over Lake Mead, the Hoover Dam, the Water Treatment Facility and Las Vegas gave them a new view on the importance of that work.

Hoover Dam Facts

1. Hoover Dam is 726 feet tall (221 meters). That is 171 feet (52 meters) taller than the Washington Monument in the nation's capital.

2. At its base, Hoover Dam is as thick (660 feet, or 201 meters) as two footballs fields measured end-to-end.

3. There is enough concrete in Hoover Dam (4 1/2 million cubic yards) to build a sidewalk 4 feet (1.2 meters) wide around the Earth at the Equator.

4. During peak electricity periods, enough water runs through the generators to fill 15 average sized swimming pools (20,000 gallons each, or almost 76,000 liters) in 1 second.

5. If you drink water from the tap at Disneyland in Anaheim, California, or Sea World in San Diego, that water is coming from the Colorado River and Lake Mead 300 miles (480 kilometers) away.

6. When operating at full power, the 17 generators can supply all the electricity needed by a city of 750,000 people.

7. There are 2,700 miles (4,350 kilometers) of transmission lines sending electricity from Hoover Dam to Los Angeles.

Source: *Bureau of Reclamation, U.S. Department of the Interior*